

REMARKS

Reconsideration of this application is respectfully requested in view of the following arguments.

Rejection to Specification

The Examiner has rejected the disclosure and requested that Applicant avoid the legal phraseology "said" in the Abstract. Accordingly, the Abstract has been amended, and "with said graphic cutting data" has been replaced with "with the graphic cutting data." No new matter has been added. In light of the foregoing amendment, Applicant respectfully requests that the rejection be withdrawn.

Rejection Under 35 U.S.C. §102(b)

Claims 1-3 and 5 have been rejected under 35 U.S.C. §102(b) as being anticipated by Logan (5,277,736). Applicants respectfully traverse the rejection.

Logan merely describes weeding or removing material around a graphic by placing an overlay sheet on the graphic and pulling the surrounding material away. First, Logan describes adjustment of a counterweight to vary the pressure applied by a knife in a tool holder in order to cut a graphic into a sign material sheet M. (Step 102). Next, an overlay sheet O is placed over the sheet material. (Step 107.) In one embodiment, the knife in the cutting tool is replaced with a pressure tool. (Step 108). The controller then causes the pressure tool to follow a second path along the overlay sheet slightly offset from the cut lines made in the cutting step. (Step 116). The application of the pressure tool causes the overlay sheet to bond to the weed portions of

the sign material sheet. (Col. 8, line 48 – Col. 9, line 1). The overlay sheet is then pulled away from the sheet material to separate the bonded portions of the sign material sheet from the remaining sheet of sign material. (Logan Fig. 9)

Logan Figure 11a, cited by the Examiner, illustrates the application of the pressure tool as described above. The knife 84, on the tool assembly 80, cuts along the path illustrated by 81. The pressure tool 86, also on tool assembly 80, then retraces the graphic onto the overlay sheet O (step 116) with a slightly offset path illustrated by 19. During this second pass, the pressure tool bonds the overlay sheet O to the sheet material M. (Col. 8, line 48 – Col. 9, line 1). Logan is silent as to a secondary pass involving cutting through a different material, as claimed in the current invention.

In an alternate embodiment of the cutting tool in Logan, the knife and pressure tool are combined into one tool, eliminating the need to substitute the pressure tool for the knife in the bonding step. (Step 108). As the pressure tool is applied to the overlay sheet in the bonding step, the attached knife cuts slightly into the overlay sheet. However, the thickness of the overlay sheet is greater than the cutting depth of the knife tip to ensure that the knife does not penetrate “through or even substantially through” the overlay sheet. (Col. 8, lines 53-58). Thus, Logan does not disclose a secondary step involving cutting through a different material in either embodiment.

In contrast, the current invention discloses multiple cutting passes along lines of cut defined by command signals. First, a cutting blade cuts through portions of a layer of a sheet-type work material in a single pass. The blade then makes multiple cutting passes on the semi-rigid carrier layer, selectively cutting through portions of the carrier layer.

Logan clearly lacks multiple cutting steps where a cutting tool cuts through different materials. Logan simply describes the secondary step of applying a pressure tool to cause bonding of an overlay sheet with the sign material sheet. Further, the overlay sheet is specifically disclosed as having a greater thickness than the cutting depth of the knife tip so as to *avoid* cutting through the overlay sheet. (Col. 8, line 33 – Col. 9, line 8). Logan is therefore clearly distinguishable from the current invention.

Accordingly, in view of the foregoing, Applicant's present invention is not taught or suggested in, and is thus distinguishable over, the art of record. Applicant requests reconsideration and withdrawal of the rejection under §102(b).

Rejection Under 35 U.S.C. §103(a)

Claim 4 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Logan (5,277,736) in view of Nelson (4,624,169). The Examiner stated that Logan discloses all the claimed features of Applicant's claimed invention except for sensing the amount of pressure exerted by the cutting blade in a direction approximately normal to the work material, adjusting the pressure a desired amount to cut through the flexible layer in a single pass and into the carrier layer on each of the multiple cutting pass. The Examiner further stated that Nelson teaches sensing the amount of pressure exerted by the cutting blade in a direction approximately normal to the work material, adjusting the pressure a desired amount to cut through the flexible layer in a single pass and into the carrier layer on each of the multiple cutting pass. Therefore, the Examiner concluded that it would have been obvious to provide Logan with the characteristics taught by Nelson to allow for greater longevity of the cutting blade. Applicant respectfully

traverses the rejection and submits that a *prima facie* case of obviousness has not been established, and that Claim 4 would not have been obvious over the references cited above.

1. Nelson Teaches Away From the Claimed Sensor

Applicant contends that the references relied upon by the Examiner do not disclose each and every element of the claimed invention. To establish *prima facie* obviousness, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981 (CCPA 1974). As explained in the Abstract section of Nelson, the angle between the cutting blade and the maskant is varied as the cutting device is moved by the rectilinear robot. During operation, the blade of the apparatus is rotated to create a different cutting angle between the blade and the maskant. (Col. 7, lines 41-46).

Claim 4 of the instant application requires that the pressure sensing means be “approximately normal to the work material.” Nelson teaches away from the claimed pressure sensing means that is “approximately normal to the work material.” Nelson discloses a cutting apparatus that is rotated to create a different cutting angle. The sensing means must also then be rotated. This necessarily changes the contact between the blade and the workpiece to an angle that is not normal to the workpiece. Therefore, the pressure sensor in Nelson can not be normal to the work material as the Applicant claims.

Applicant respectfully submits that since the cited references do not teach or suggest what the Applicant claims, but in fact teaches away, a *prima facie* case of

obviousness has not been made. Applicant requests reconsideration and withdrawal of the rejection under §103(a).

2. Logan is Non-Analogous Art

Applicant contends that there is no suggestion or motivation for combining the reference Logan with the teachings of Nelson. It is well settled that there must be some teaching or motivation in the prior art to combine teachings of references. In Re Fine, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Further, in order to sustain a rejection of obviousness, the secondary reference must address the same subject matter as the primary reference. Caster v. U.S., 9 U.S.P.Q. 2d 1753 (Cls. Ct. 1988).

Logan is non-analogous art and discloses different subject matter than the subject matter disclosed in Nelson. One skilled in the art would not have looked at Logan to combine it with the disclosure in Nelson. Logan merely discloses weeding or removing material for small scale plastic/paper materials around a graphic by cutting into a sign material sheet. (Col. 7, lines 14-34). Logan describes the purpose of the invention as creating graphics in a web of flexible sign material to facilitate creating messages. (Col. 2, lines 50-58). Logan describes the sheet material as consisting of soft polyvinylchloride and paper. (Col. 7, lines 14-34). Logan further describes the materials as being extremely thin, having a combined thickness of as low as 0.022 inches. (Col. 7, lines 14-34).

Nelson discloses a method and apparatus for use in chemical milling operations for large scale metal processes. Its intended use is for application with large sections of metal sheets. (Col. 2, lines 30-38). In Nelson, the large metal workpiece remains

stationary, while a robotic arm with cutting blade moves to achieve the cutting. Nelson discloses a method to chemically mill large sheet metal work pieces. (Col. 1, lines 8-10).

Applicant notes that Nelson and Logan were examined in very different classes. Nelson was assigned to Class 83 ("Cutting"), while Logan was assigned to Class 156 ("Adhesive Bonding and Miscellaneous Chemical Manufacture"). Further, Nelson is directed towards a method for chemical milling of large metal pieces, while Logan is directed towards cutting graphics for signs. Given the diversity of the classifications of Nelson and Logan, as well as their respective subject matter, Applicant asserts that there is no motivation or suggestion to combine these references. Applicant respectfully requests reconsideration and withdrawal of the rejection under §103(a).

CONCLUSION

In view of the foregoing, Applicant respectfully submits that the claims as currently pending are patentable and in condition for allowance.

If any issues remain, or if the Examiner has any suggestions for expediting allowance of this application, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Favorable consideration is respectfully requested.

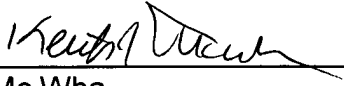
AUTHORIZATION

The Commissioner is hereby authorized to charge any additional fees which may be required for this response, or credit any overpayment of Deposit Account No. 13-4500, Order No. 4758-4014US1. **A duplicate of this Authorization is included.**

Respectfully submitted,
MORGAN & FINNEGAN, L.L.P.

Dated: January 10, 2006

By:


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